

* edit authorized by Examiner

CRF Errors Corrected by the STIC Systems Branch

CRF Processing Date:

4/9/2003

Edited by:

Verified by:

(STIC staff)

Serial Number: 09/270,4370

ENTERED

Changed a file from non-ASCII to ASCII

Changed the margins in cases where the sequence text was wrapped down to the next line.

Edited a format error in the Current Application Data section, specifically:

Edited the Current Application Data section with the actual current number. The number inputted by the applicant was the prior application data; or other _____

Added the mandatory heading and subheadings for "Current Application Data".

Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.

Changed the spelling of a mandatory field (the headings or subheadings), specifically:

Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:

Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.

Inserted colons after headings/subheadings. Headings edited included:

Deleted extra, invalid, headings used by an applicant, specifically:

Deleted: non-ASCII "garbage" at the beginning/end of files; secretary initials/filename at end of file; page numbers throughout text; other invalid text, such as _____

Inserted mandatory headings, specifically:

Corrected an obvious error in the response, specifically:

Edited identifiers where upper case is used but lower case is required, or vice versa.

Corrected an error in the Number of Sequences field, specifically:

A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.

Deleted ending stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected:

Other: inserted an initial 'c' at location 2161 of sequence 1

Examiner: The above corrections must be communicated to the applicant in the first Office
Action. DO NOT send a copy of this form.

3/1/95



1600

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/270,437D

DATE: 04/09/2003
TIME: 13:16:41

Input Set : A:\PTO.AMC.txt
Output Set: N:\CRF4\04092003\I270437D.raw

1 <110> APPLICANT: Chen, Yao-Tseng
 2 Gure, Ali
 3 Tsang, Solam
 4 Stockert, Elisabeth
 5 Jager, Elke
 6 Knuth, Alexander
 7 Old, Lloyd J.
 9 <120> TITLE OF INVENTION: Isolated Nucleic Acid Molecules Encoding Cancer Associated Antigen, The
 10 Antigens Per Se, And Uses Thereof
 12 <130> FILE REFERENCE: LUD 5538.1
 14 <140> CURRENT APPLICATION NUMBER: 09/270,437D
 C--> 16 <141> CURRENT FILING DATE: 1999-03-16
 18 <150> PRIOR APPLICATION NUMBER: 09/061,709
 20 <151> PRIOR FILING DATE: 1998-04-17
 22 <160> NUMBER OF SEQ ID NOS: 23
 25 <210> SEQ ID NO: 1
 26 <211> LENGTH: 4265
 27 <212> TYPE: DNA
 28 <213> ORGANISM: Homo sapiens
 W--> 29 <220> FEATURE:
 W--> 30 <400> SEQUENCE: 1

32 gcttgaagga cctgaggcat tttgtacgca ggatcgctc aggtcagcgg agggaggaga	60
33 ctatagacc tatccagtct tcaagggtct ccagaaaagca ggagttgaag acctgggtgt	120
34 gagggacaca tacatcctaa aagcaccaca gcagaggagg cccaggcagt gccaggagtc	180.
35 aagggttccca gaagacaaac ccccttaggaa gacaggcgac ctgtgaggcc ctagagcacc	240
36 acctaagag aagaagagct gtaagccggc ctttgtcaga gccatcatgg gggacaagga	300
37 tatgcctact gctggatgc cgagtcttcc ccagagttcc tctgagagtc ctcagagttg	360
38 tcctgagggg gaggactccc agtctcctct ccagattccc cagagtttc ctgagagcga	420
39 cgacaccctg tatcctctcc agagtcctca gagtcgtct gagggggagg actcctcgga	480
40 tcctctccag agacccctg aggggaagga ctcccagtct cctctccaga ttccccagag	540
41 ttctctgag ggcgacgaca cccagtctcc tctccagaat tctcagagtt ctctgaggg	600
42 gaaggactcc ctgtctcctc tagagatttc tcagagccct cctgagggtg aggatgtcca	660
43 gtctcctctg cagaatcctg cgagttcctt cttctcctct gctttattga gtattttcca	720
44 gagttccctt gagatattc aaagtcctt tgagggttt ccccagtctg ttctccagat	780
45 tcctgtgagc gccgcctct cctccactt agtgagtatt ttccagagtt cccctgagag	840
46 tactcaaagt ccttttgagg gttttccca gtctccactc cagattcctg tgagccgctc	900
47 ctctccctcc actttattga gtatttcca gagttccctt gagagaagtc agagaacttc	960
48 tgagggtttt gcacagtctc ctctccagat tcctgtgagc tcctcctcgt cctccacttt	1020
49 actgagtctt ttccagagtt cccctgagag aactcagagt acttttgagg gttttccca	1080
50 gtctccactc cagattcctg tgagccgctc cttctcctcc actttattga gtattttcca	1140
51 gagttccctt gagagaactc agagtaattt tgagggtttt gcccagtctc ctctccagat	1200
52 tcctgtgagc ccctcctct cctccacttt agtgagtatt ttccagagtt cccctgagag	1260
53 aactcagagt acttttgagg gttttccca gtctcctctc cagattcctg tgagctcctc	1320

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/270,437D

DATE: 04/09/2003

TIME: 13:16:41

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF4\04092003\I270437D.raw

54 cttctcctcc actttattga gtctttcca gagttcccct gagagaactc agagtactt 1380
 57 tgagggtttt ccccagtctc ctctccagat tcctggaagc ccctccttct cctccactt 1440
 58 actgagtctt ttccagagtt cccctgagag aactcacagt acttttggg gtttccccca 1500
 59 gtctcctctc cagattcccta tgaccccttc cttctcctct acttttattga gtatttaca 1560
 60 gagttctcct gagagtgtctc aaagtgcctt tgagggtttt ccccgagtctc ctctccagat 1620
 61 tcctgtgagc tcctcttctt cctacactt attgagtctt ttccagagtt cccctgagag 1680
 62 aactcacagt acttttggg gtttccccca gtctcctctc cagattcctg tgagtcctc 1740
 63 ctccctcctcc tccactttat tgagtctttt ccagagttcc cctgagtgtta ctcaaagtac 1800
 64 ttttgggggt tttcccccagt ctccctcctca gattcctcag agtcctcctg aaggggagaa 1860
 65 tacccattct cctctccaga ttgttccaag tcttcctgag tgggaggact ccctgtctcc 1920
 66 tcactacttt cctcagagcc ctccctcaggg ggaggactcc ctatctcctc actacttcc 1980
 67 tcagagccct cctcaggggg aggactccct gtctcctcac tactttcctc agagccctca 2040
 68 gggggaggac tccctgtctc ctcaactt ctccagagc cctccctcagg gggaggactc 2100
 69 catgtctctt ctctactttc ctcaagatcc tcttcagggg gaggaaattcc agtcttctct 2160
 70 ccagagccct gtgagcatct gtccttcctc cactccatcc agtcttcccc agagttcccc 2220
 71 tgagagtctt cagagtctc ctgagggggcc tgtccagttct octctccata gtcctcagag 2280
 72 ccctcctgag gggatgcact cccaatctcc tctccagagtt cctgagatgt ctccctgaggg 2340
 73 ggaggattcc ctgtctcctc tccaaattcc tcagagtctt ctggaggag aggactccct 2400
 74 gtcttcctcc cattttcctc agagtcctcc tgagtgggag gactccctct ctcctctcca 2460
 75 ctccctcag tttcctcctc agggggagga ctccctcagttct tctctccaga gtcctgtgag 2520
 76 tatctgtctt ccctccactt ctttgagtct tccccagagt tccctgaga gtcctcagag 2580
 77 tcctcctgag gggcctgctc agtctcctct ccagagaccc gtcagctct tcttcctctta 2640
 78 cacttagcg agtcttctcc aaagttccca tgagagtctt cagagtcctc ctgagggggcc 2700
 79 tgccctcaga ctcctccaga gtcctgtgag ctccctccccc tcctccactt catcgagtct 2760
 80 ttcccagagt tctcctgtga gtccttcctc tcctccact tcatcgagtc tttccaagag 2820
 81 ttcccctgag agtccctcttcc agagtcctgt gatctccttc tcctcctcca cttcattgag 2880
 82 cccattcagt gaagagtcca gcagcccagt agatgaatat acaagttctt cagacacccct 2940
 83 gctagagagt gattccttga cagacagcga gtccttgata gagagcggc ctttgttac 3000
 84 ttatacactg gatgaaaagg tggacgagtt ggcgcgggctt cttctcctca aatatcaagt 3060
 85 gaagcagccct atcacaaaagg cagagatgtc gacgaatgtc atcagcaggta acacgggcta 3120
 86 ctccctgtt atcttcagga aagccctgtt gttcatagat atacttttg gcatattccct 3180
 87 gagagaagtg gaccctgtatg actccttatgt ctttgtaaac acatttagacc tcacctctga 3240
 88 ggggtgtctg agtgatgagc agggcatgtc ccagaaccgc ctccctgattt ttattctgag 3300
 89 tatcatcttc ataaaggcca cctatgcctc tgaggaggc atctgggatg tgctgagtg 3360
 90 aataggggtt cgtgctggga gggagcactt tgccttggg gagcccagg agtcctcact 3420
 91 taaagtttg gtgcaggaac attacctaga gtaccgggag gtgcccaact cttctcctcc 3480
 92 tcgttacgaa ttccctgtgg gtccttgcagc tcattcagaa gtcattaaaga ggaaagtagt 3540
 93 agagtttttg gccatgtttaa agaataccgt cccttattacc tttccatcct cttacaagga 3600
 94 tgctttgaaa gatgttggaa agagagccca ggcctataatt gacaccacag atgattcgac 3660
 95 tgccacagaa agtgcacatcc ctccatgtcat gtcccccagg ttctcttctg agtgaagtct 3720
 96 agggcagatt ctccctctg agtttggg gggcgttcga gtttctacgt ggtggaggc 3780
 97 ctgggttggg ctggagagaa cacagtgttca tttgcatttc tggtccatatt gggtagttat 3840
 98 ggggtttacc tgtttactt ttgggttattt ttccaaatgtt ttcccttatta ataacaggtt 3900
 99 taaatagttt cagaatccca gtttatgcac atgagtcgc catgtatttc tgttttctg 3960
 100 gtttaagagt aacagtttga tattttgtaa aaacaaaaac acacccaaac acaccacatt 4020
 101 gggaaaacct tctgcctcat tttgtatgt gtcacaggtt aatgtgggt tactgttaga 4080
 102 attttcttga aactgttgaag gaactctgca gttaaatagt ggaataaaatgaaaggattgt 4140
 103 taatgtttgc atttcctcag gtcctttagt ctgttgcattt tgaaaactaa agatacatac 4200
 104 ctgggttgc tggcttacgt aagaaagtcg aagaaagtaa actgtatataa ataaaagtgt 4260

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/270,437D

DATE: 04/09/2003
TIME: 13:16:41

Input Set : A:\PTO.AMC.txt
Output Set: N:\CRF4\04092003\I270437D.raw

```

105 cagtg                                4265
107 <210> SEQ ID NO: 2
108 <211> LENGTH: 1142
109 <212> TYPE: PRT
110 <213> ORGANISM: Homo sapiens
113 <220> FEATURE:
W--> 114 <400> SEQUENCE: 2
116 Met Gly Asp Lys Asp Met Pro Thr Ala Gly Met Pro Ser Leu Leu Gln
117           5          10          15
118 Ser Ser Ser Glu Ser Pro Gln Ser Cys Pro Glu Gly Glu Asp Ser Gln
119           20         25          30
120 Ser Pro Leu Gln Ile Pro Gln Ser Ser Pro Glu Ser Asp Asp Thr Leu
121           35         40          45
122 Tyr Pro Leu Gln Ser Pro Gln Ser Arg Ser Glu Gly Glu Asp Ser Ser
123           50         55          60
124 Asp Pro Leu Gln Arg Pro Pro Glu Gly Lys Asp Ser Gln Ser Pro Leu
125 65           70          75          80
126 Gln Ile Pro Gln Ser Ser Pro Glu Gly Asp Asp Thr Gln Ser Pro Leu
127           85         90          95
128 Gln Asn Ser Gln Ser Ser Pro Glu Gly Lys Asp Ser Leu Ser Pro Leu
129           100        105         110
130 Glu Ile Ser Gln Ser Pro Pro Glu Gly Glu Asp Val Gln Ser Pro Leu
131           115        120         125
132 Gln Asn Pro Ala Ser Ser Phe Phe Ser Ser Ala Leu Leu Ser Ile Phe
133           130        135         140
134 Gln Ser Ser Pro Glu Ser Ile Gln Ser Pro Phe Glu Gly Phe Pro Gln
135 145           150        155         160
136 Ser Val Leu Gln Ile Pro Val Ser Ala Ala Ser Ser Ser Thr Leu Val
137           165        170         175
138 Ser Ile Phe Gln Ser Ser Pro Glu Ser Thr Gln Ser Pro Phe Glu Gly
139           180        185         190
140 Phe Pro Gln Ser Pro Leu Gln Ile Pro Val Ser Arg Ser Phe Ser Ser
141           195        200         205
142 Thr Leu Leu Ser Ile Phe Gln Ser Ser Pro Glu Arg Ser Gln Arg Thr
143           210        215         220
144 Ser Glu Gly Phe Ala Gln Ser Pro Leu Gln Ile Pro Val Ser Ser Ser
145 225           230        235         240
146 Ser Ser Ser Thr Leu Leu Ser Leu Phe Gln Ser Ser Pro Glu Arg Thr
147           245        250         255
148 Gln Ser Thr Phe Glu Gly Phe Pro Gln Ser Pro Leu Gln Ile Pro Val
149           260        265         270
150 Ser Arg Ser Phe Ser Ser Thr Leu Leu Ser Ile Phe Gln Ser Ser Pro
151           275        280         285
152 Glu Arg Thr Gln Ser Thr Phe Glu Gly Phe Ala Gln Ser Pro Leu Gln
153           290        295         300
154 Ile Pro Val Ser Pro Ser Phe Ser Ser Thr Leu Val Ser Ile Phe Gln
155 305           310        315         320
156 Ser Ser Pro Glu Arg Thr Gln Ser Thr Phe Glu Gly Phe Pro Gln Ser
157           325        330         335

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/270,437D

DATE: 04/09/2003
TIME: 13:16:41

Input Set : A:\PTO.AMC.txt
Output Set: N:\CRF4\04092003\I270437D.raw

```

158 Pro Leu Gln Ile Pro Val Ser Ser Ser Phe Ser Ser Thr Leu Leu Ser
159          340           345           350
160 Leu Phe Gln Ser Ser Pro Glu Arg Thr Gln Ser Thr Phe Glu Gly Phe
161          355           360           365
162 Pro Gln Ser Pro Leu Gln Ile Pro Gly Ser Pro Ser Phe Ser Ser Thr
163          370           375           380
164 Leu Leu Ser Leu Phe Gln Ser Ser Pro Glu Arg Thr His Ser Thr Phe
165 385          390           395           400
166 Glu Gly Phe Pro Gln Ser Pro Leu Gln Ile Pro Met Thr Ser Ser Phe
169          405           410           415
170 Ser Ser Thr Leu Leu Ser Ile Leu Gln Ser Ser Pro Glu Ser Ala Gln
171          420           425           430
172 Ser Ala Phe Glu Gly Phe Pro Gln Ser Pro Leu Gln Ile Pro Val Ser
173          435           440           445
174 Ser Ser Phe Ser Tyr Thr Leu Leu Ser Leu Phe Gln Ser Ser Pro Glu
175          450           455           460
176 Arg Thr His Ser Thr Phe Glu Gly Phe Pro Gln Ser Pro Leu Gln Ile
177 465          470           475           480
178 Pro Val Ser Ser Ser Ser Ser Thr Leu Leu Ser Leu Phe Gln
179          485           490           495
180 Ser Ser Pro Glu Cys Thr Gln Ser Thr Phe Glu Gly Phe Pro Gln Ser
181          500           505           510
182 Pro Leu Gln Ile Pro Gln Ser Pro Pro Glu Gly Glu Asn Thr His Ser
183          515           520           525
184 Pro Leu Gln Ile Val Pro Ser Leu Pro Glu Trp Glu Asp Ser Leu Ser
185          530           535           540
186 Pro His Tyr Phe Pro Gln Ser Pro Pro Gln Gly Glu Asp Ser Leu Ser
187 545          550           555           560
188 Pro His Tyr Phe Pro Gln Ser Pro Pro Gln Gly Glu Asp Ser Leu Ser
189          565           570           575
190 Pro His Tyr Phe Pro Gln Ser Pro Gln Gly Glu Asp Ser Leu Ser Pro
191          580           585           590
192 His Tyr Phe Pro Gln Ser Pro Pro Gln Gly Glu Asp Ser Met Ser Pro
193          595           600           605
194 Leu Tyr Phe Pro Gln Ser Pro Leu Gln Gly Glu Glu Phe Gln Ser Ser
195          610           615           620
196 Leu Gln Ser Pro Val Ser Ile Cys Ser Ser Ser Thr Pro Ser Ser Leu
197 625          630           635           640
198 Pro Gln Ser Phe Pro Glu Ser Ser Gln Ser Pro Pro Glu Gly Pro Val
199          645           650           655
200 Gln Ser Pro Leu His Ser Pro Gln Ser Pro Pro Glu Gly Met His Ser
201          660           665           670
202 Gln Ser Pro Leu Gln Ser Pro Glu Ser Ala Pro Glu Gly Glu Asp Ser
203          675           680           685
204 Leu Ser Pro Leu Gln Ile Pro Gln Ser Pro Leu Glu Gly Glu Asp Ser
205          690           695           700
206 Leu Ser Ser Leu His Phe Pro Gln Ser Pro Pro Glu Trp Glu Asp Ser
207 705          710           715           720
208 Leu Ser Pro Leu His Phe Pro Gln Phe Pro Pro Gln Gly Glu Asp Phe

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/270,437D

DATE: 04/09/2003
TIME: 13:16:41

Input Set : A:\PTO.AMC.txt
Output Set: N:\CRF4\04092003\I270437D.raw

209	725	730	735	
210	Gln Ser Ser Leu Gln Ser Pro Val Ser Ile Cys Ser Ser Ser Thr Ser			
211	740	745	750	
212	Leu Ser Leu Pro Gln Ser Phe Pro Glu Ser Pro Gln Ser Pro Pro Glu			
213	755	760	765	
214	Gly Pro Ala Gln Ser Pro Leu Gln Arg Pro Val Ser Ser Phe Phe Ser			
215	770	775	780	
216	Tyr Thr Leu Ala Ser Leu Leu Gln Ser Ser His Glu Ser Pro Gln Ser			
217	785	790	795	800
218	Pro Pro Glu Gly Pro Ala Gln Ser Pro Leu Gln Ser Pro Val Ser Ser			
219	805	810	815	
220	Phe Pro Ser Ser Thr Ser Ser Leu Ser Gln Ser Ser Pro Val Ser			
221	820	825	830	
222	Ser Phe Pro Ser Ser Thr Ser Ser Leu Ser Lys Ser Ser Pro Glu			
225	835	840	845	
226	Ser Pro Leu Gln Ser Pro Val Ile Ser Phe Ser Ser Ser Thr Ser Leu			
227	850	855	860	
228	Ser Pro Phe Ser Glu Glu Ser Ser Ser Pro Val Asp Glu Tyr Thr Ser			
229	865	870	875	880
230	Ser Ser Asp Thr Leu Leu Glu Ser Asp Ser Leu Thr Asp Ser Glu Ser			
231	885	890	895	
232	Leu Ile Glu Ser Glu Pro Leu Phe Thr Tyr Thr Leu Asp Glu Lys Val			
233	900	905	910	
234	Asp Glu Leu Ala Arg Phe Leu Leu Lys Tyr Gln Val Lys Gln Pro			
235	915	920	925	
236	Ile Thr Lys Ala Glu Met Leu Thr Asn Val Ile Ser Arg Tyr Thr Gly			
237	930	935	940	
238	Tyr Phe Pro Val Ile Phe Arg Lys Ala Arg Glu Phe Ile Glu Ile Leu			
239	945	950	955	960
240	Phe Gly Ile Ser Leu Arg Glu Val Asp Pro Asp Asp Ser Tyr Val Phe			
241	965	970	975	
242	Val Asn Thr Leu Asp Leu Thr Ser Glu Gly Cys Leu Ser Asp Glu Gln			
243	980	985	990	
244	Gly Met Ser Gln Asn Arg Leu Leu Ile Leu Ile Leu Ser Ile Ile Phe			
245	995	1000	1005	
246	Ile Lys Gly Thr Tyr Ala Ser Glu Glu Val Ile Trp Asp Val Leu Ser			
247	1010	1015	1020	
248	Gly Ile Gly Val Arg Ala Gly Arg Glu His Phe Ala Phe Gly Glu Pro			
249	1025	1030	1035	1040
250	Arg Glu Leu Leu Thr Lys Val Trp Val Gln Glu His Tyr Leu Glu Tyr			
251	1045	1050	1055	
252	Arg Glu Val Pro Asn Ser Ser Pro Pro Arg Tyr Glu Phe Leu Trp Gly			
253	1060	1065	1070	
254	Pro Arg Ala His Ser Glu Val Ile Lys Arg Lys Val Val Glu Phe Leu			
255	1075	1080	1085	
256	Ala Met Leu Lys Asn Thr Val Pro Ile Thr Phe Pro Ser Ser Tyr Lys			
257	1090	1095	1100	
258	Asp Ala Leu Lys Asp Val Glu Glu Arg Ala Gln Ala Ile Ile Asp Thr			
259	1105	1110	1115	1120

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 04/09/2003
PATENT APPLICATION: US/09/270,437D TIME: 13:16:42

Input Set : A:\PTO.AMC.txt
Output Set: N:\CRF4\04092003\I270437D.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:4; N Pos. 3347,3502,3506,3520,3538,3549,3646,3940,3968,3974,4036,4056
Seq#:4; N Pos. 4062,4080,4088,4115
Seq#:5; N Pos. 1384,1464,1533,1571,1595
Seq#:6; N Pos. 3372
Seq#:7; N Pos. 1622,1702,1771,1809,1833
Seq#:8; N Pos. 3243